

Size.—Length, 25.80–27.40 mm (male) and 28.00–31.00 mm (female); respiratory appendages, 25.50–29.00 mm (male) and 26.85–3.20 mm (female). In most of our specimens the caudal filaments are slightly longer than the body. Montandon (1907) gives their length in the type as slightly shorter than the body.

Distribution.—The writers have examined more than 60 nymphs and adults from Guayaquil, Ecuador, all collected by Dr. Francisco Campos R. The types were also taken at Guayaquil by Dr. Campos.

Affinities.—The size of body, metaxyphus and male parameres separate *R. camposi* from *R. annulipes*. The smaller form, shorter caudal appendages and shorter fore legs separate it from *R. ecuadoriensis* De Carlo.

***Ranatra ecuadoriensis* De Carlo**

1946. *Ranatra annulipes* De Carlo, An. Mus. Arg. Cien. Nat. **42**: 14–16, 3 figs. (part).

1950. *Ranatra ecuadoriensis* De Carlo, Rev. Bras. Biol. **10** (4): 525–526, figs. 9–10.

For a detailed description and illustrations of this species, see De Carlo's paper of 1950. The male is unknown. The following notes are based upon three females, Guayaquil, Ecuador, Jan. 26, 1952, taken in a temporary rainwater pool, Dr. F. Campos, in company with numerous specimens of *R. camposi* Kirkaldy.

General aspect very similar to *R. camposi*, larger and with the anterior femora and prothorax longer. Length of body, 32.50 mm; respiratory tubes, 34.50 mm; anterior femora, 10.30 mm; coxae, 7.10 mm; pronotum on median line, 8.80 mm. Antennae and anterior femora as figured by De Carlo (1950).

Affinities.—This species is most closely related to *R. camposi*, but is readily separated from it by the dimensions of the body, anterior legs, and respiratory appendages.

ENTOMOLOGY.—*An interesting new pyrgomorphine grasshopper (Orthoptera: Acrididae) in the U. S. National Museum.* D. KEITH McE. KEVAN, University of Nottingham. (Communicated by Ashley B. Gurney.)

In the course of an examination of acridid material of the sub-family Pyrgomorphinae kindly lent to me for study by the Smithsonian Institution, I came across an interesting new species of *Chlorizeina* Brunner von Wattenwyl, 1893. Unfortunately it is known only from a few specimens but, since they considerably extend the known range of the genus, I do not think it inadvisable to describe it.

***Chlorizeina malabarensis*, n. sp.**

TYPE: ♂, India, Mangalore, June [1925], J. C. Bridwell. U. S. National Museum No. 61121.

Head.—Antennae longer than head and pronotum together, filiform, the basal half slightly flattened. Eyes prominent, oval, a little longer than wide. Frons slightly rugose, strongly oblique, concave in profile. Frontal ridge strong, narrow, deeply sulcate throughout, not reaching the clypeus. Lateral carinae strong, almost straight and only slightly divergent. Cheeks with minute scattered punctures and with a partial oblique row of small, weak, rounded tubercles extending from behind the eye to the anterolateral angle of the pronotum. Fastigium verticis rugoso-punctate,

longer than wide, rounded apically (Fig. 1, A). Median carinula of head faint but distinct throughout. Dorsal surface of head finely punctured all over, with fine transverse rugae in the vicinity of the median carinula, especially in front of the eyes.

Thorax.—Pronotum subcylindrical, strongly but finely punctured throughout, less so in the posterior part of the metazona; anterior margin slightly concave; posterior margin almost straight; median carina obsolescent; lateral carinae absent; transverse sulci fine, more or less straight, the median one placed at about the middle of the disc, the typical one at rather less than three-quarters (Fig. 1, A), anterior sulcus obsolescent, almost invisible; lateral pronotal lobes with anterior angle rounded, posterior angle forming a right-angle and inferior margin slightly sinuous. Mesonotum for the greater part concealed. Metanotum about equal to the metazona of the pronotum. Prosternal tubercle situated rather far forward, pyramidal, very slightly inclined backwards, very strongly acute. Mesosternal lobes about one and a half times as long as wide, their interspace of about the same dimensions as a lobe. Metasternal pits fairly large,

deep, and separated by a distance equal to about one-third of the greatest width of a metasternal lobe.

Wings.—Tegmina abbreviate, almost reaching the posterior margin of the first abdominal tergum, ovate-lanceolate, about twice as long as wide, acutely pointed (Fig. 1, A), veins indistinct, costal margin slightly convex, anal margin strongly so and distinctly punctured. Hind wings minute, scale-like.

Genitalia.—Tenth abdominal tergum excised and carinate as illustrated (Fig. 1, B). Epiproct flat, tongue-like (Fig. 1, B). Cerci long, strongly inwardly and upwardly curved, extending to about the end of the epiproct, narrowed before the middle and slightly thickened apically (Fig. 1, B, C). Subgenital plate obtuse.

Measurements.—Length 38; antenna 16.5; head 7.0; pronotum 7.5; tegmen 6.5; hind femur 20.5 mm.

Coloration.—More or less uniform olive-green [somewhat discoloured] except for the dark brown antennae, brown eyes, dark green gular area above the diagonal row of yellowish cheek tubercles, and the pink inferoexternal area of the hind femur.

ALLOTYPE: ♀, India, Goa, Mormugao, Sept. 1925, J. C. Bridwell.

Agrees with the type but is larger with a less cylindrical pronotum which is considerably wider behind than in front; the mesosternal lobes are scarcely longer than wide and their interspace is greater than the width of a lobe; metasternal pits separated by a distance equal to more than half a metasternal lobe. The tenth abdominal tergum is excised to the posterior margin of the ninth, the epiproct is broader than in the male and the cerci are short, straight and stout, about half as long as the epiproct. The ovipositor valves are short and stout.

Measurements.—Length 45; antenna 16.0; head 7.0; pronotum 9.5; tegmen 7.0; hind femur 20.5 mm.

PARATYPE: ♂, Same data as the allotype (British Museum).

Agrees with the type but is a little smaller and paler.

This new species is much larger than any of the three previously described. In build it resembles more closely *C. unicolor* Brunner von Wattenwyl, 1893 (cf. Ramme, 1941, pl. 12, figs. 1a, 1b, 2), but the genitalia are more like those of *C. ele-*

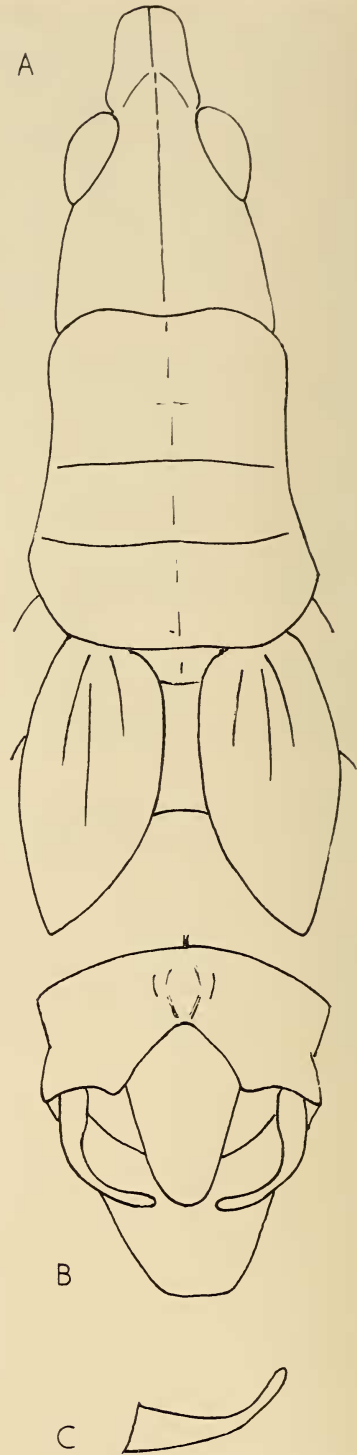


FIG. 1.—*Chlorizeina malabarensis*, n.sp.: A, Head and thorax of male (type), dorsal; B, male genitalia, dorsal; C, male cercus, lateral.

gans Ramme, 1941 (cf. Ramme, l.c.: 36, Abb. 13), although the cerci are distinctly more strongly curved.

A third species, *C. togulata* Rehn (1951), described from the Southern Shan States, Burma, has much broader cerci than those of *malabarensis*.

The genus was previously known only from Burma, and it is interesting to find that its range extends to the west coast of India. *C. elegans* is known from Upper Burma; *C. unicolor* was

previously known only from Lower Burma but is now known to me from Upper Burma also.

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ENTOMOLOGY.—*On a collection of Phlebotomus from the Yemen*. OSKAR THEODOR, Department of Parasitology, Hebrew University, Jerusalem. (Communicated by C. W. Sabrosky.)

The collection dealt with in the present note was made by Lt. Comdr. K. L. Knight, of the U. S. Naval Research Medical Unit No. 3, Cairo, Egypt, in January 1951 in southern Yemen. Practically nothing is known of the sandfly fauna of Arabia and these records may be considered as new. The collections made by Commander Knight are as follows:

Coll. 304. Ta'izz, Yemen. Jan. 12, 1951. Elev. 4,100 feet. Trapped on oiled paper at base of stone walls at damp spots by cess-pit drainages, in the city proper. *P. sergenti*, *P. langeroni* var. *orientalis*, *P. chinensis arabicus*, n. subsp., *S. tiberiadis*.

Coll. 306. Ta'izz, Yemen, Jan. 14, 1951. Elev. 3,590 feet. Trapped on oiled paper at entrances of rodent burrows (mostly *Arvicanthus* sp.) on an aloe-euphorbia hillside. Outside the town about 3 miles. *P. papatasi* var. *bergeroti*, *P. roubaudi*, *P. langeroni* var. *orientalis*, *S. africana*, *S. schwetzi*, *S. antennata* var. *cincta*.

Coll. 307. Ta'izz, Jan. 15, 1951. Same as coll. 304. Same species.

Coll. 309. El-Hauban, Wadi el-Maleh, about 3 miles east of Ta'izz. Jan. 17, 1951. Elev. about 3,700 feet. Trapped on oiled paper in rodent burrows at base of small rock cliff. *P. roubaudi*, *S. tiberiadis*.

Coll. 15. Ta'iz, Yemen. Jan. 21, 1951. Caught biting a number of small boys sitting near our quarters in town. From dark until 19:45 hours. Bright moon. *P. papatasi* var. *bergeroti*, *P. sergenti*, *P. langeroni* var. *orientalis*, *P. chinensis arabicus* n. subsp.

Genus *Phlebotomus* Rondani, 1840

Subgenus *Phlebotomus* Rondani

Phlebotomus papatasi var. *bergeroti* Parrot, 1934

3 ♂♂, 1 ♀ coll. 306; 1 ♀ coll. 15, biting man in Ta'izz. The species has been recorded from Djanet in southern Algeria, from Abyssinia, and the Anglo-Egyptian Sudan.

Phlebotomus roubaudi Newstead, 1913

1 ♀, 5 ♂♂ coll. 306; and 1 ♀ coll. 309 from rodent burrows.

This species was originally described from Akjoucht in Mauretania and has subsequently been found to occur in a belt south of the Sahara throughout Africa. It has been found by Kirk and Lewis west of Lake Rudolf in the Anglo-Egyptian Sudan.

The absence of typical *P. papatasi*, which is closely related to these two species and which occurs commonly in the Anglo-Egyptian Sudan (together with *P. papatasi* var. *bergeroti* but not with *P. roubaudi*) is noteworthy.

Subgenus *Paraphlebotomus* Theodor, 1948

Phlebotomus sergenti Parrot, 1917

2 ♂♂, 2 ♀♀ coll. 304/307; 1 ♀ coll. 15, biting man in Ta'izz. This species is known from the central Sahara, French West Africa, the southern Mediterranean, and from the Middle East, extending into North West India. It is very common in Bagdad, where it is the main carrier of Oriental sore and rare in Palestine. It has not been recorded from the Anglo-Egyptian Sudan or from Abyssinia, where 2 other species of the subgenus occur (*P. alexandri* and *P.*